

Abstract

A mechanical returnless fuel system comprises a fuel pump having an output for supplying fuel to fuel injectors of an automotive engine. The fuel system includes a pressure regulating valve that returns a portion of the pump output in excess of engine fuel usage to the fuel supply. The pressure regulating valve results in a fuel pressure that varies as a function of engine fuel demand. During operation, a controller determines a projected engine fuel demand, then determines an estimated fuel pressure based upon the projected engine fuel demand. The controller utilizes the estimated fuel pressure to provide a more accurate calculation of the opening time for the fuel injectors and thereby improve engine control.